

Application No. 10/525,105
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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-11 (canceled).

Claim 12 (currently amended): A line converter comprising:
a three-dimensional waveguide arranged to propagate an electromagnetic wave
in a three-dimensional space;

a dielectric substrate; and

a plane circuit having a conductor pattern disposed on said dielectric substrate;
wherein

the dielectric substrate is arranged to be substantially parallel to an E plane-E of
the three-dimensional waveguide and at an approximately central portion of the three-
dimensional waveguide and the conductor pattern of the dielectric substrate includes a
conductor portion defining a shield area of the three-dimensional waveguide, a
coupling-line portion that is electromagnetically coupled to a standing wave that occurs
in the shield area, and a transmission-line portion extending from the coupling-line
portion.

Claim 13 (previously presented): The line converter according to Claim 12,
wherein the conductor portion includes ground conductors disposed on two surfaces of
the dielectric substrate.

Claim 14 (currently amended): The line converter according to Claim 13, further
comprising a plurality of conduction paths that penetrates the dielectric substrate and
that is aligned on at least one of two sides of the transmission-line portion, so as to be

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spaced away from the transmission line by as much as a predetermined distance, so that conduction is established between the ground conductors disposed on said two surfaces of the dielectric substrate.

Claim 15 (currently amended): The line converter according to Claim 12, wherein a conductor of the three-dimensional waveguide is divided into two portions including an upper portion and a lower portion by a plane that is substantially parallel to the E plane-E and a space is provided in the conductor of the three-dimensional waveguide so as to create a choke defined by the space, where the space is provided at a position that is spaced away from the three-dimensional waveguide by as much as a predetermined distance, so as to be substantially parallel to an electromagnetic-wave propagation direction of the three-dimensional waveguide.

Claim 16 (currently amended): The line converter according to Claim 12, wherein the transmission-line part-portion includes a micro-strip line including the-a ground conductor disposed on one of the surfaces of the dielectric substrate and a line conductor disposed on the surface opposed thereto and on which the coupling-line portion is disposed to define a suspended line including the line conductor disposed on one of the surfaces of the dielectric substrate and the conductor of the three-dimensional waveguide.

Claim 17 (previously presented): A high-frequency module comprising the line converter according to Claim 12 and a high-frequency circuit connected to each of the plane circuit and the three-dimensional waveguide of the line converter.

Claim 18 (previously presented): A high-frequency module comprising the line converter according to Claim 15 and a high-frequency circuit connected to each of the plane circuit and the three-dimensional waveguide of the line converter.

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Claim 19 (previously presented): A high-frequency module comprising the line converter according to Claim 16 and a high-frequency circuit connected to each of the plane circuit and the three-dimensional waveguide of the line converter.

Claim 20 (previously presented): A communication device comprising the high-frequency module according to Claim 17 provided in a unit for transmitting and receiving an electromagnetic wave.

Claim 21 (previously presented): A communication device comprising the high-frequency module according to Claim 18 provided in a unit for transmitting and receiving an electromagnetic wave.

Claim 22 (previously presented): A communication device comprising the high-frequency module according to Claim 19 provided in a unit for transmitting and receiving an electromagnetic wave.